



Data Brief

Injuries Among Massachusetts Residents, 2013

Massachusetts Department of Public Health

January 2017

Injuries are a Major Public Health Problem in Massachusetts

Injuries are the *third* leading cause of death among Massachusetts residents and the *leading* cause of death among Massachusetts residents ages 1 to 44. In 2013, 3,343 Massachusetts residents died as a result of unintentional, self-inflicted or assault-related injuries (46.1 per 100,000¹). In addition, there were 72,963 hospital stays (975.0 per 100,000) and 693,271 emergency department (ED) visits (10,522.7 per 100,000) among MA residents associated with nonfatal injuries (Figure 1). These figures do not include injuries which were only treated at home or in a physician's office.

What do we mean by “injury”?

Injuries are bodily harm – fatal or nonfatal - that can be caused by fires, car crashes, drowning, sharp objects, guns, poisoning, being struck by something, tripping on the sidewalk, pedestrian injuries and more. Injuries may be unintentional (sometimes referred to as “accidental”), self-inflicted harm or assault-related.

Report Contents

This report describes injuries to MA residents in 2013 that resulted in death or required treatment at a MA acute care hospital. Sections include:

- **Leading Causes of Injury Death and Hospital Stays**
- **Fatal and Nonfatal Injury Rates**
- **Injury Rates by Sex**
- **Injury Rates by Race and Ethnicity**
- **Injury Costs**
- **Injury Trends, 2004 - 2013**
- **MA Injury Prevention Activities and Resources**

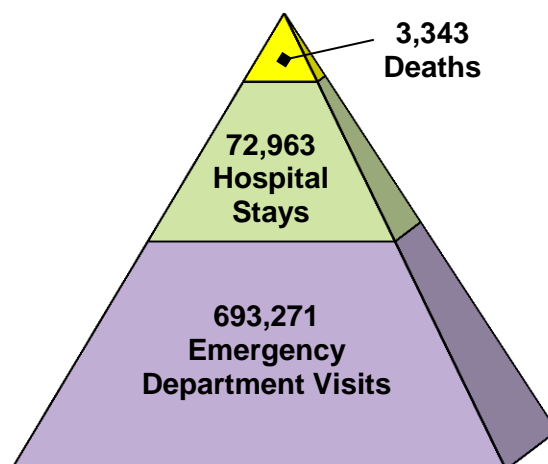


Figure 1. Total Burden of Injuries, MA Residents, 2013²

Key Findings

Among MA residents in 2013:

- Unintentional injuries accounted for the majority (74%) of the 3,343 injury deaths.
- As a result of injury deaths, MA residents lost an estimated 78,292 years of life prior to age 75.
- MA residents incurred over \$3 billion in charges for injury-related hospital stays and ED visits.
- The leading causes of unintentional injury death were poisoning/overdoses (43%), falls (25%) and motor vehicle traffic-related injuries (15%).
- Falls among MA adults ages 65 and over accounted for approximately one in five (22%) unintentional injury deaths and rates of such deaths are increasing.
- Death rates for overdoses, firearm injuries, suicide and homicide vary significantly by race/ethnicity.

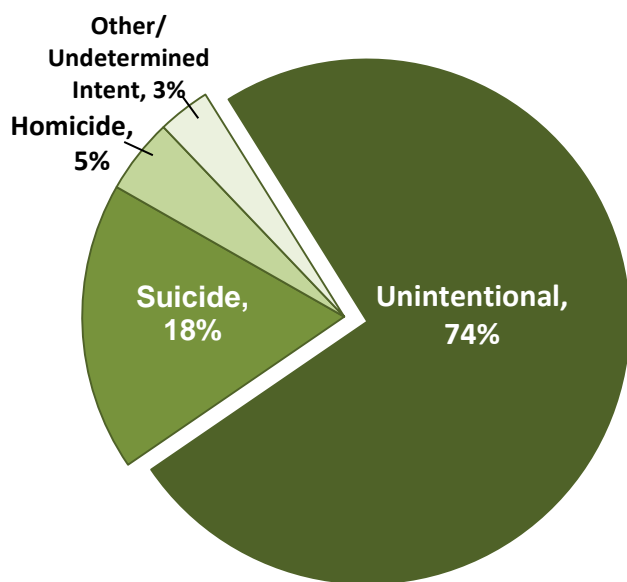
1. All rates are age-adjusted rates per 100,000 MA residents unless otherwise specified.

2. The MA Department of Public Health has modified its injury definitions to align more closely with national standards. Data from this report therefore should not be compared with previous injury reports. See notes on page 6 for complete injury definitions.



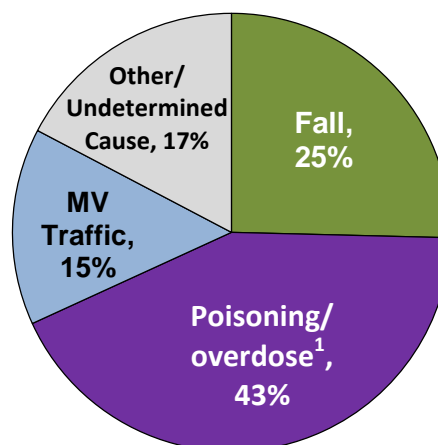
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Leading Causes of Injury Death



Injury Deaths by Intent
(n = 3,343)

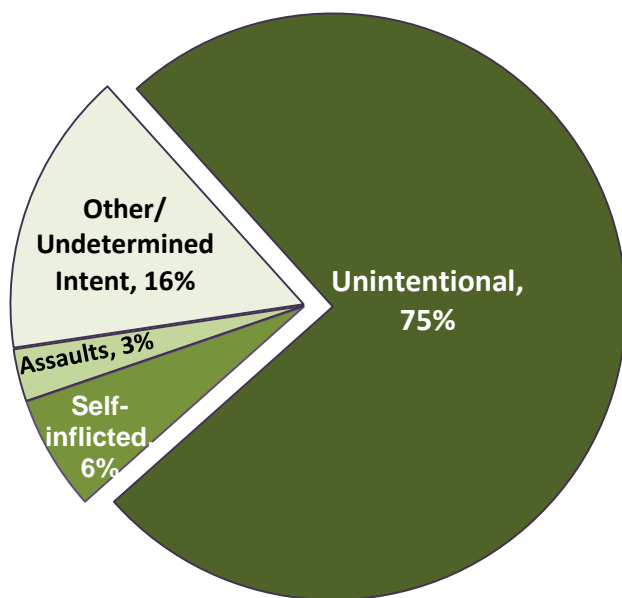
- Unintentional injuries accounted for three-quarters (74%) of the 3,343 injury deaths of MA residents in 2013.



Unintentional Injury Deaths by Cause
(n = 2,485)

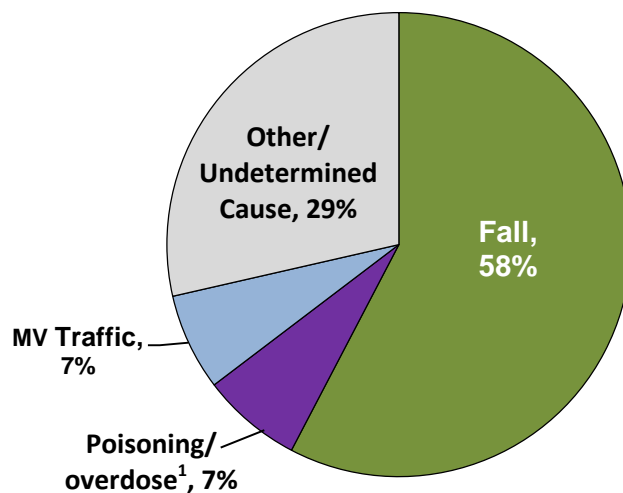
- The leading causes of the 2,485 unintentional injury deaths among MA residents in 2013 were poisoning/overdoses¹ (43%), falls (25%) and motor vehicle (MV) traffic-related injuries (15%).

Leading Causes of Injury-related Hospital Stays



Injury-related Hospital Stays by Intent
(n = 72,963)

- Unintentional injuries accounted for three out of four (75%) of the 72,963 injury-related hospital stays of MA residents in 2013.



Unintentional Injury Hospital Stays by Cause²
(n = 54,805)

- Falls accounted for 58% of hospital stays for unintentional injury in 2013. Of these 31,596 fall-related hospital stays, over two-thirds (69%) involved MA adults ages 65 and older. (Data not shown.)

1. Unintentional poisoning/overdoses only. Does not include intentional poisoning/overdoses or those of undetermined intent.

2. Percentages may not total 100% due to rounding.



Injuries Among Massachusetts Residents, 2013

Fatal and Nonfatal Injury Overview

Among MA residents in 2013,

- There were a total of 3,343 injury deaths, as well as 72,963 hospital stays and 693,271 ED visits for nonfatal injuries.
- Unintentional injuries accounted for 74% of injury deaths, 75% of injury hospital stays and 91% of injury ED visits.
- Over one in five injury deaths (23%) and one in ten injury-related hospital stays (11%) involved a traumatic brain injury.
- Falls among MA adults ages 65 and over accounted for about one in five unintentional injury deaths (22%) and two out of five hospital stays for unintentional injury (40%).



Table 1. Fatal and Nonfatal Injuries among MA Residents, 2013

	Deaths		Nonfatal Hospital Stays		Nonfatal ED Visits	
	All rates are age-adjusted per 100,000 MA residents					
	Number	Rate	Number	Rate	Number	Rate
TOTAL INJURIES	3,343	46.1	72,963	975.0	693,271	10,522.7
Selected Injuries (regardless of intent; categories may overlap with those below)						
Traumatic Brain Injury	765	10.0	8,088	108.4	67,026	1,013.0
Poisoning/overdoses	1,246	18.3	8,487	122.7	17,683	271.8
Firearms	217	3.2	347	5.2	399	6.0
Unintentional	2,485	33.8	54,805	722.6	630,320	9,549.1
Fall-related	631	7.5	31,596	399.3	182,858	2,698.8
Falls among persons 65+	548	51.1	21,939	2,114.9	46,995	4,630.5
Motor vehicle traffic-related	361	5.0	3,707	52.6	71,990	1,080.0
Motor vehicle occupant ²	226	3.2	2,449	34.5	64,312	965.5
Motorcyclist	47	0.7	539	7.7	2,272	33.7
Pedestrian ³	90	1.2	621	8.9	3,981	59.4
Pedal Cyclist ³	13	0.2 ¹	594	8.5	8,160	128.3
Drowning/submersion	66	0.9	31	0.5	132	2.1
Fire/burn	30	0.4	567	8.2	8,628	133.0
Suicide/self-inflicted	595	8.5	4,614	68.4	7,199	110.4
Homicide/assault	155	2.3	2,106	31.6	24,511	371.8

1. Rates based on counts of less than 20 may be unstable.

2. Includes drivers, passengers and unspecified persons.

3. Due to traffic and non-traffic related incidents.



Injuries Among Massachusetts Residents, 2013

Injury Rates by Sex

- Males have higher injury rates than females for most types of injuries. Among MA residents in 2013, death rates among males compared to females were:
 - 2x higher for unintentional injury deaths (45.8 vs. 22.9 per 100,000)
 - Nearly 3x higher for suicide (12.8 vs. 4.5 per 100,000) and
 - 3x higher for homicide (3.5 vs. 1.1 per 100,000).
- The greatest differences in injury rates by sex were for motorcyclist and firearm injuries. Males were 13x as likely to die in a motorcycle crash and 11x as likely to be killed by a firearm as females in MA.
- Death rates due to traumatic brain injury, poisoning/overdoses, MV occupant and pedestrian injuries and drowning among males were also two or more times as high as among females in MA.



Table 2. Injury Rates by Sex, MA Residents, 2013

	Deaths		Nonfatal Hospital Stays		Nonfatal ED Visits	
	All rates are age-adjusted per 100,000 MA residents					
	Males (n=2,135)	Females (n=1,208)	Males (n=34,643)	Females (n=38,320)	Males (n=366,612)	Females (n=326,659)
TOTAL INJURIES	64.0	29.6	1,042.0	897.3	11,497.4	9,530.4
Selected Injuries (regardless of intent; categories may overlap with those below)						
Traumatic Brain Injury	14.3	6.3	131.1	87.4	1,109.1	910.0
Poisoning/overdoses	25.1	11.8	118.3	127.0	288.5	255.7
Firearms	5.9	0.5 ¹	9.6	0.8	10.8	1.3
Unintentional	45.8	22.9	761.5	670.9	10,380.2	8,698.3
Fall-related	8.9	6.6	364.9	416.5	2,621.6	2,739.2
Falls among persons 65+	58.3	46.9	1,743.1	2,350.2	3,817.6	5,221.8
Motor vehicle traffic-related	7.0	3.2	67.7	38.2	1,025.8	1,134.7
Motor vehicle occupant ⁴	4.2	2.2	39.9	29.4	866.8	1,063.3
Motorcyclist	1.3	<0.1 ¹	14.3	1.4	57.8	10.2
Pedestrian ⁵	1.6	0.8	10.4	7.5	67.8	51.3
Pedal Cyclist ⁵	0.2 ¹	0.2 ¹	13.8	3.4	191.1	66.4
Drowning/submersion	1.5	0.5 ¹	0.6 ¹	0.4 ¹	2.8	1.4
Fire/burn	0.4 ¹	0.4 ¹	10.0	6.4	136.6	129.4
Suicide/self-inflicted	12.8	4.5	59.3	77.4	90.6	130.6
Homicide/assault	3.5	1.1	50.4	13.3	455.1	290.6

1. Rate was based on a count of less than 20 and may be unstable.

2. Includes drivers, passengers and unspecified persons.

3. Due to traffic and non-traffic related incidents.



Injuries Among Massachusetts Residents, 2013

MA Injury Rates by Race and Ethnicity

Note: Race and ethnicity are not risk factors for injury, but comparing injury rates by race and ethnicity can help identify populations at greater risk for specific injuries.

Compared to other racial/ethnic groups,

- White, non-Hispanics have the highest death rates due to poisoning/overdoses, unintentional falls and suicide.
- Black, non-Hispanics have the highest death rates due to firearm injuries and homicide.
- Asian, Pacific Islanders have the lowest injury rates for selected categories, with the exception of unintentional fall deaths and suicide. (Tables 3 and 4)

Table 3. Death Rates¹ for Leading Injury Causes by Race/Ethnicity, MA Residents, 2013

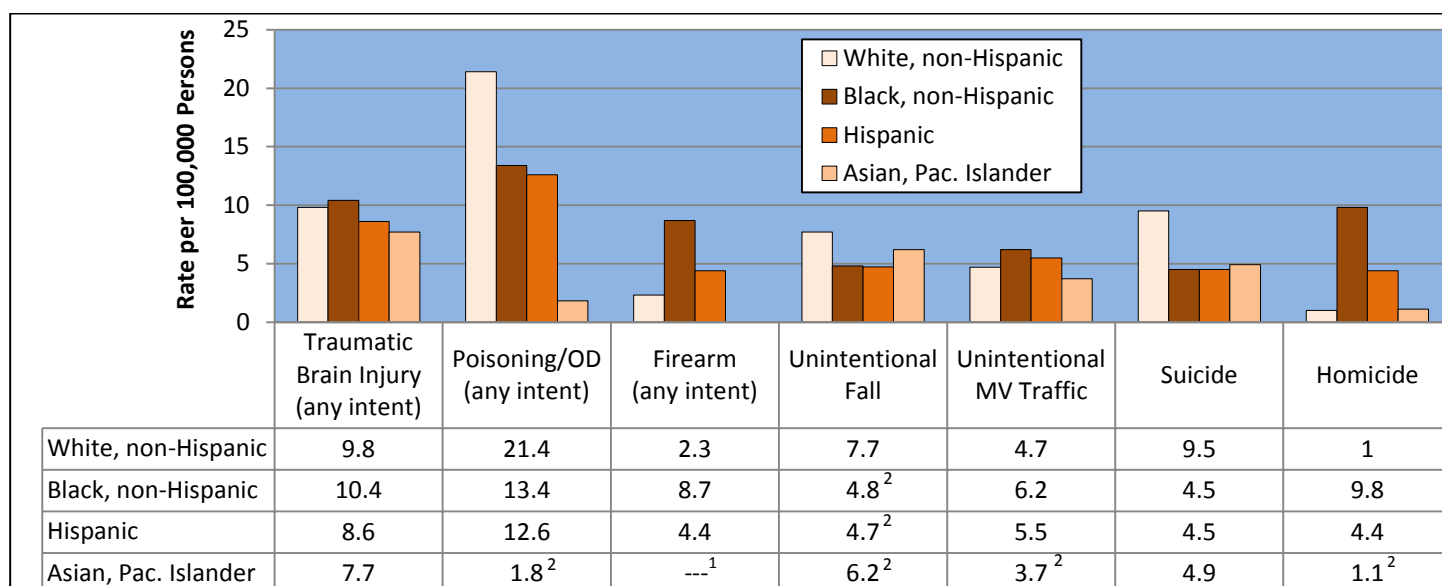
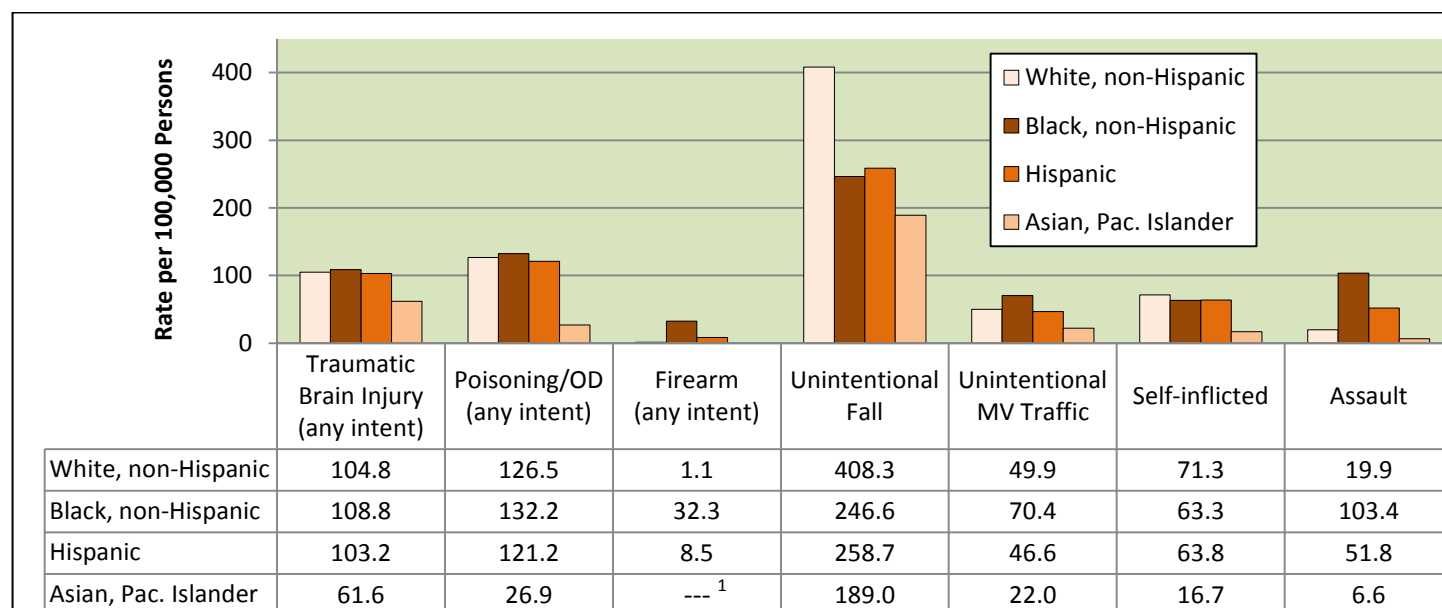


Table 4. Hospital Stay Rates¹ for Selected Nonfatal Injuries by Race/Ethnicity, MA Residents, 2013



1. Age-adjusted rates per 100,000 persons. Rates are not calculated for fewer than 5 deaths or 11 nonfatal injuries.

2. Rate is based on a count of less than 20 and may be unstable.



Injuries Among Massachusetts Residents, 2013

Injury Costs

While the true cost of injuries - including physical and emotional suffering - cannot be measured, costs that can be estimated provide additional indicators of the burden of injury in Massachusetts.

- **Years of Potential Life Lost (YPLL):** As a result of injury deaths that occurred in 2013, Massachusetts residents lost an estimated 78,292 years of life prior to age 75. (*CDC WISQARS*)
- **Work Loss Costs:** In addition, deaths of Massachusetts residents due to injuries in 2013 were associated with an estimated \$4.4 billion in lifetime work loss costs. (*CDC WISQARS*)
- **Hospital Charges¹:** Hospital charges are the initial charges by acute care hospitals and may not reflect actual costs or amount paid. Some charges may be related to conditions other than the injury involved. It should be noted that hospital charges represent only a portion of the costs associated with medical care for injuries, as they do not include costs associated with outpatient visits, rehabilitation, long-term care, etc.
 - In 2013, MA residents incurred over \$3 billion in charges for injury-related hospital stays and ED visits. The majority of such charges, \$2.5 billion (79%), were associated with unintentional injuries.
 - Hospital charges associated with unintentional fall injuries totaled \$1.2 billion, of which 59% (\$728 million) were associated with fall injuries among adults ages 65 and older.
 - Hospital charges associated with traumatic brain injuries (TBI) totaled \$498 million. Over half (52%) of these charges were associated with fall injuries and one-fifth (20%) with MV traffic injuries. (Table 5)

Table 5. MA Hospital Charges¹ for Injury-related Cases, MA Residents, 2013

	Hospital Stay Charges	ED Visit Charges	Total Charges
TOTAL INJURIES	\$2,104,929,609	\$1,097,186,469	\$3,202,116,078
Selected Injuries (regardless of intent; categories may overlap with those below)			
Traumatic Brain Injury	\$311,300,973	\$186,438,944	\$497,739,917
All Poisoning/overdoses (OD)	\$155,468,239	\$33,045,572	\$188,513,811
Firearms	\$23,455,169	\$1,778,644	\$25,233,813
Unintentional	\$1,574,442,520	\$970,185,167	\$2,544,627,687
Fall-related	\$867,384,610	\$366,116,467	\$1,233,501,077
Falls among persons 65+	\$593,648,960	\$134,006,384	\$727,655,344
Motor vehicle traffic-related	\$187,354,345	\$141,083,120	\$328,437,465
Motor vehicle occupant ²	\$115,750,016	\$118,795,827	\$234,545,843
Motorcyclist	\$30,896,903	\$7,340,159	\$38,237,062
Pedestrian ³	\$36,301,480	\$11,340,940	\$47,642,420
Pedal Cyclist ³	\$18,365,608	\$17,062,569	\$35,428,177
Drowning/submersion	\$1,307,521	\$417,872	\$1,725,393
Fire/burn	\$27,486,111	\$8,696,361	\$36,182,472
Suicide/self-inflicted	\$94,822,586	\$18,153,990	\$112,976,576
Homicide/assault	\$79,219,375	\$55,870,713	\$135,090,088

1. All dispositions are included when calculating charges, including transfers and in-hospital deaths.

2. Includes drivers, passengers and unspecified persons.

3. Due to traffic and non-traffic related incidents.



Injuries Among Massachusetts Residents, 2013

Trends - Drug Overdose Deaths

Drug overdoses may be due to prescription or illicit drugs and often involve a combination of drugs. Some of the most common drugs involved in drug overdose deaths in Massachusetts are opioids, benzodiazepines and cocaine.

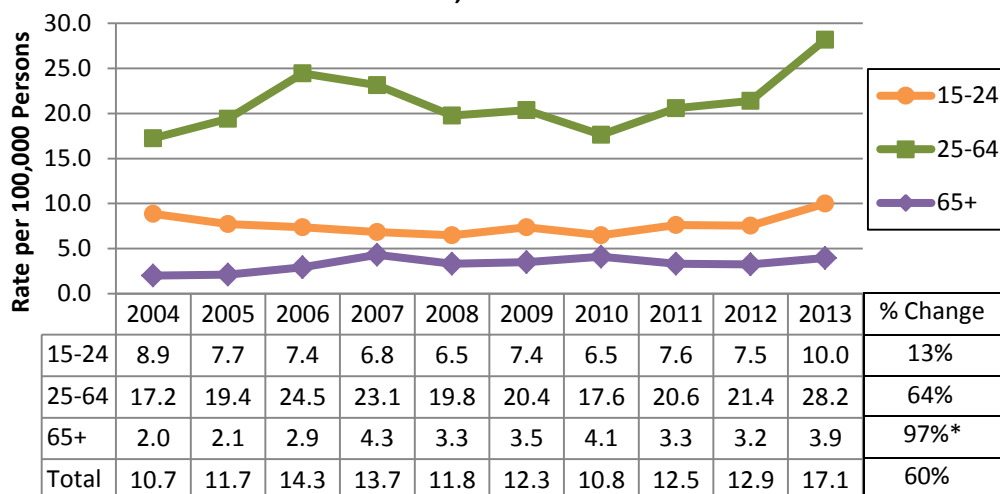


- Between 2004 and 2013, drug overdose deaths among MA residents increased by 60%, from 695 to 1,157. This was primarily due to an increase in opioid-related overdose deaths. Data specifically related to opioid overdoses can be found at <http://www.mass.gov/opioid>.

- MA adults ages 25-64 had the highest drug overdose death rates during this time period. These rates have fluctuated over this 10-year time period, but have increased steadily since 2010.

- Drug overdose death rates were lowest among MA residents ages 65+, but rates nearly doubled (97%* increase) in this age group between 2004 and 2013.

Figure 2a. Drug Overdose Death Rates¹ by Age Group, MA Residents, 2004-2013²



Hospital Stays for Drug Overdoses

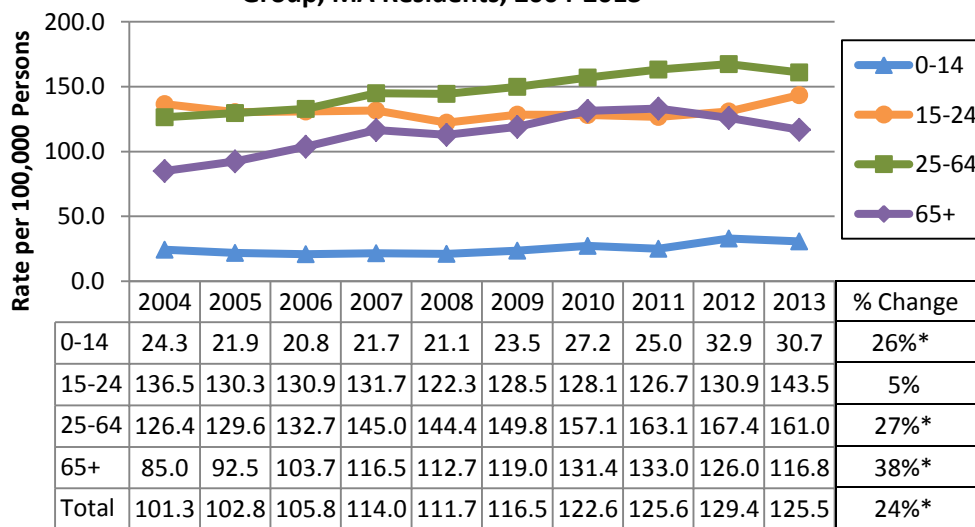
- Between 2004 and 2013, the number of hospital stays for nonfatal drug overdoses increased from 6,597 to 8,707. This corresponds to a 24%* increase in the overall rate, from 101.3 to 125.5 per 100,000 persons, over this time period.

- All age groups experienced a significant increase in hospital stay rates for drug overdoses except for young people ages 15-24.

- For most of this time period, hospital stay rates for drug overdoses were highest among MA adults ages 25-64, but rates for young people ages 15-24 and older adults ages 65+ were not far behind.

- Children ages 0-14 had the lowest hospital stay rates for drug overdoses, but this rate also increased significantly over this time period.

Figure 2b. Hospital Stay Rates¹ for Drug Overdoses by Age Group, MA Residents, 2004-2013



*Change in rate between 2004 and 2013 was statistically significant at $p < .05$

1. Rates for age groups are age-specific and rates for the total population are age-adjusted per 100,000 persons.

2. Children ages 0-14 are not included in table 6a, as there were too few deaths annually to calculate accurate rates.



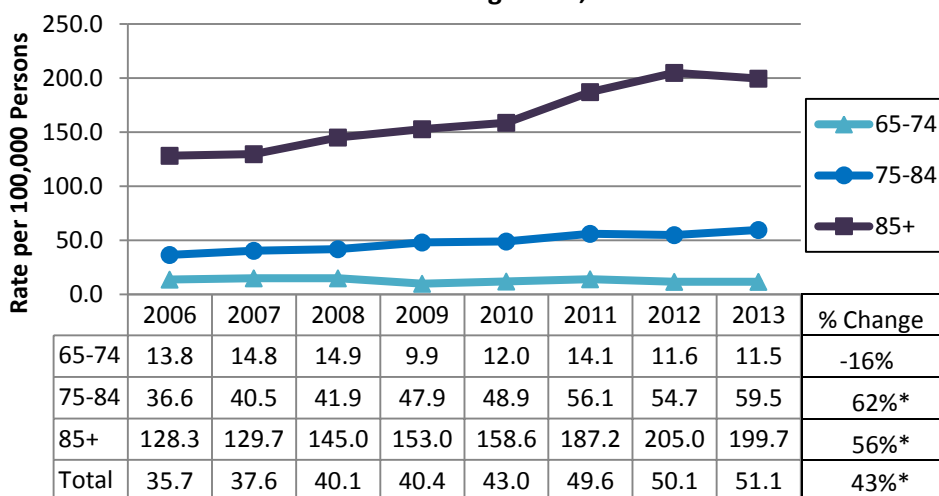
Injuries Among Massachusetts Residents, 2013

Trends - Fall Deaths among Older Adults

- Due to changes in the coding of fall deaths in 2005, this trend analysis focuses on the years 2006 to 2013. Over this 8-year period, the number of fall deaths among MA residents ages 65 and older increased from 340 to 548. This corresponds to a 43%* increase in the age-adjusted rate of fall deaths among adults ages 65+, from 35.7 to 51.1 per 100,000 persons.
- Fall death rates increased significantly among MA adults ages 75-84 and 85 and older between 2006 and 2013, but remained fairly stable among those ages 65-74.
- MA residents ages 85+ had the highest fall death rates over this time period. This rate increased 56%* between 2006 and 2013, from 128.3 to 199.7 per 100,000 persons.
- Fall death rates increased 62%* among MA adults ages 75-84, from 36.6 to 59.5 per 100,000 persons.



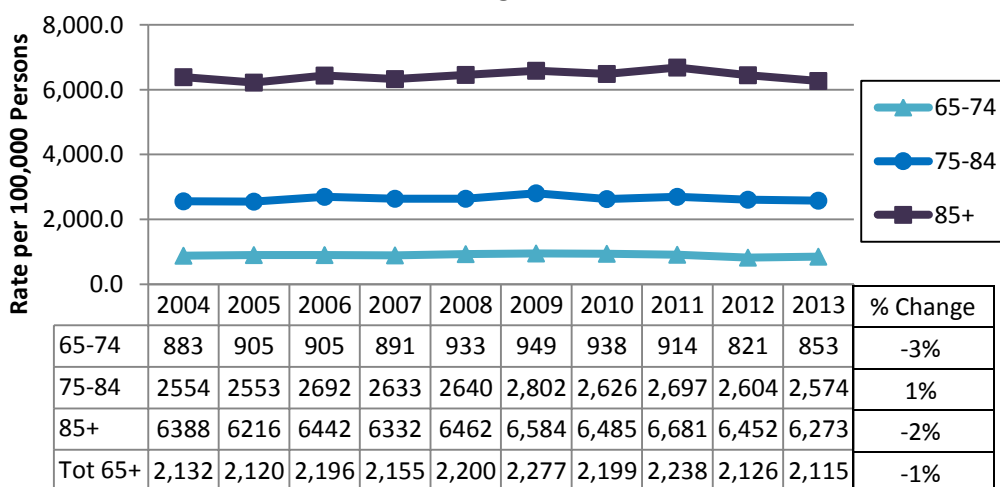
Figure 3a. Fall Death Rates¹ by Age Group, MA Residents Ages 65+, 2006-2013



Hospital Stays for Fall Injuries among Older Adults

- The age-adjusted rate of hospital stays for nonfatal fall injuries among MA residents ages 65 and older did not change significantly between 2004 and 2013. Due to an increase in the number of older adults in MA, however, the number of such injuries increased from 19,711 to 21,939 over this 10-year period.
- Hospital stay rates for nonfatal fall injuries also did not change significantly over this time period in the three age groups examined (ages 65-74, 75-84 and 85+).
- MA residents ages 85+ had the highest rates of hospital stays for fall injuries, with a rate of 6,273 per 100,000 persons in 2013.
- In 2013, hospital stay rates for fall injuries in MA residents ages 85+ were more than twice as high as in older adults ages 75-84 (2,574 per 100,000 persons) and over 7x as high as in adults ages 65-74 (853 per 100,000).

Figure 3b. Hospital Stay Rates¹ for Fall Injuries by Age Group, MA Residents Ages 65+, 2004-2013



*Change in rate over the entire time period was statistically significant at $p < .05$

1. Rates for age groups are age-specific and rates for the total population ages 65+ are age-adjusted per 100,000 persons.



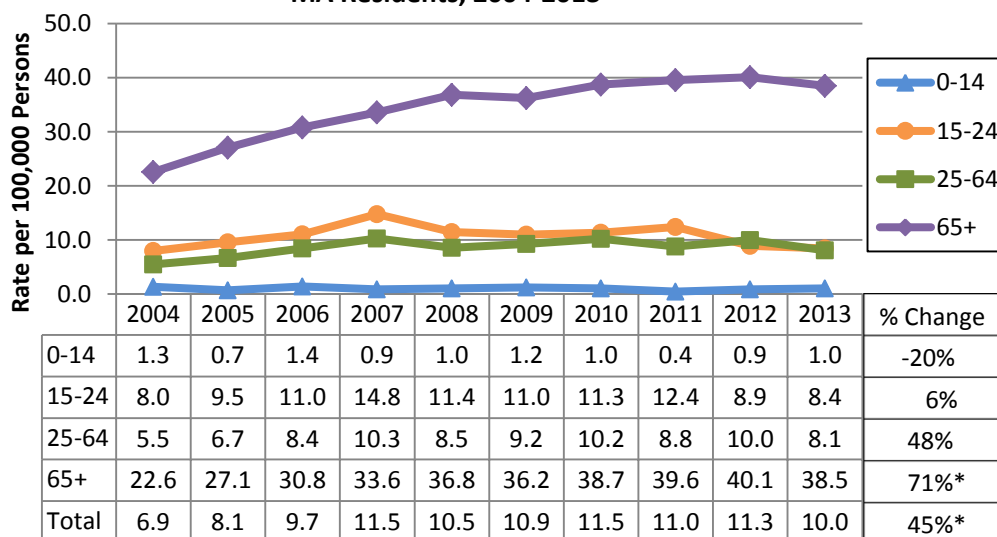
Injuries Among Massachusetts Residents, 2013

Trends – Traumatic Brain Injury-related Deaths

- Between 2004 and 2013, the number of deaths of MA residents that involved a traumatic brain injury (TBI) increased from 467 to 765. This corresponds to a 45%* increase in the age-adjusted rate of TBI-related deaths. This increase was mainly due to a rise in unintentional fall deaths among MA adults ages 65 and older.
- MA residents ages 65 and older had the highest TBI-related death rates. This rate increased 71%* between 2004 and 2013, although most of this increase occurred before 2010.
- TBI-related death rates were fairly similar among MA residents ages 15-24 and 25-64, with rates of 8.5 and 8.1 per 100,000 persons respectively in 2013. These rates did not change significantly over this time period.
- TBI-related death rates among MA children ages 0-14 remained very low throughout this time period, with no significant change in rates.



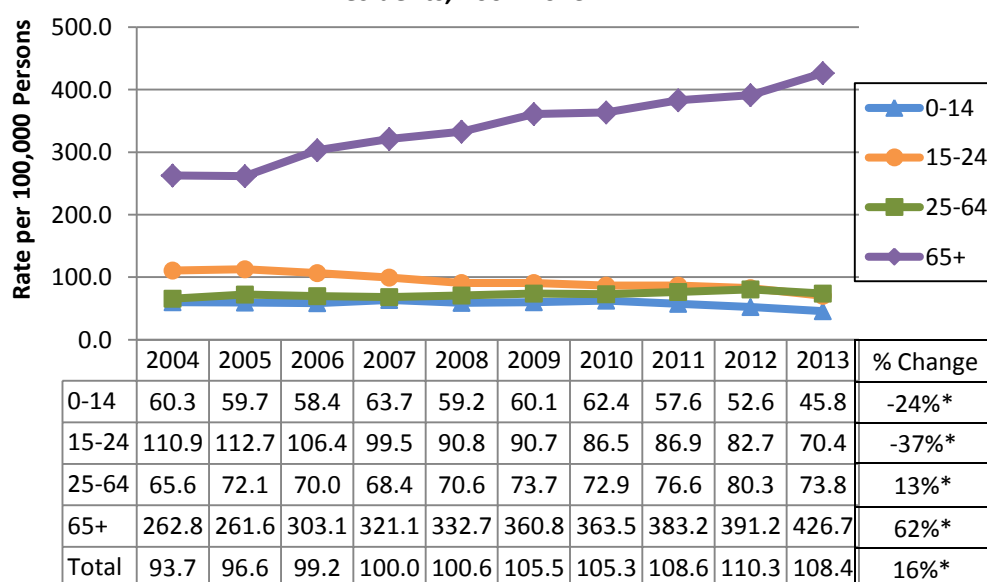
Figure 4a. TBI-related Death Rates¹ by Age Group, MA Residents, 2004-2013



Hospital Stays Involving Traumatic Brain Injury

- Between 2004 and 2013, the number of hospital stays of MA residents that involved a TBI increased from 6,216 to 8,088. This corresponds to a 16%* increase in the age-adjusted rate over this time period. This was largely due to an increase in fall-related TBIs among MA adults ages 65 and older.
- TBI-related hospital stay rates were highest among MA residents ages 65 and older and increased by 62%* over this time period.
- TBI-related hospital stays rates among the other three age groups (0-14, 15-24 and 25-64) were fairly similar between 2004 and 2013.
- TBI-related hospital stay rates decreased among children ages 0-14 (-24%*) and young people ages 15-24 (-37%*), but increased slightly among MA adults ages 25-64 (13%*).

Figure 4b. TBI-related Hospital Stay Rates¹ by Age Group, MA Residents, 2004-2013



*Change in rate over the entire time period was statistically significant at $p < .05$

1. Rates for age groups are age-specific and rates for the total population are age-adjusted per 100,000 persons.



Injuries Among Massachusetts Residents, 2013

Trends – Traffic-related Motor Vehicle Occupant Deaths

- Between 2004 and 2013, the number of traffic-related motor vehicle (MVT) occupant deaths among MA residents decreased from 345 to 226. This corresponds to a 38%* decrease in the age-adjusted rate of MVT occupant deaths, from 5.2 to 3.2 per 100,000 persons.
- MVT occupant death rates decreased by 49%* among ages 15-24 and by 42%* among adults ages 25-64 over this time period.
- There was no net change in MVT occupant death rates for adults ages 65+ between 2004 and 2013.
- Between 2004 and 2009, MVT occupant death rates were highest among ages 15-24, but from 2010 to 2013, rates for ages 15-24 and adults ages 65+ were similar.
- Children ages 0-14 are not included in this table, as there were too few deaths in recent years (less than 5) to calculate accurate rates.

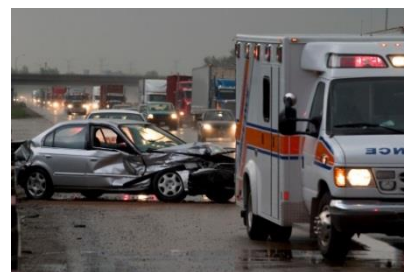
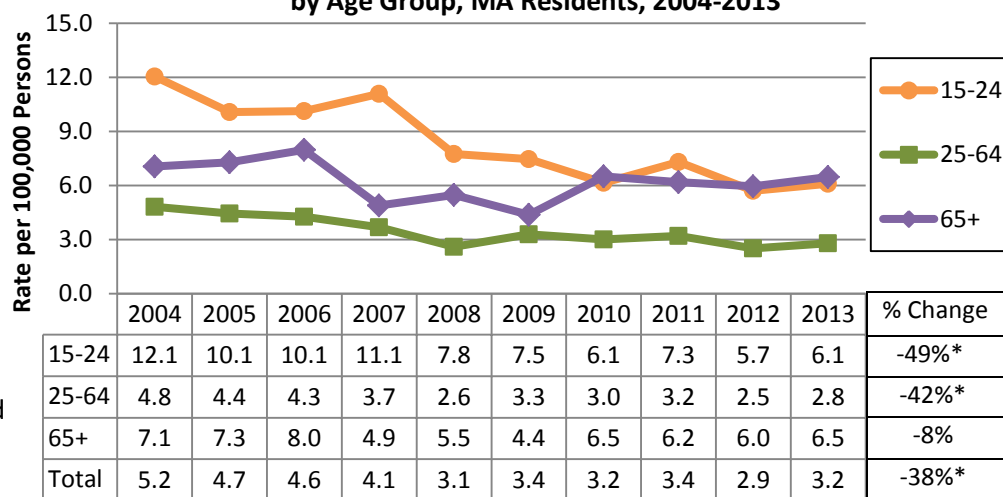


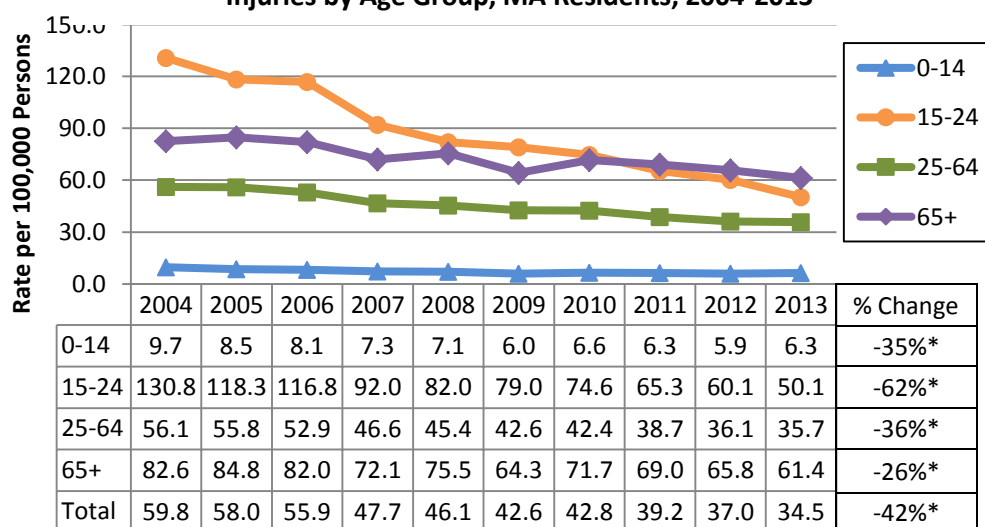
Figure 5a. Traffic-related MV Occupant Death Rates¹ by Age Group, MA Residents, 2004-2013



Hospital Stays for Traffic-related Motor Vehicle Occupant Injuries

- Between 2004 and 2013, the number of hospital stays for nonfatal traffic-related MV occupant injuries decreased from 3,915 to 2,449. This corresponds to a 42%* decrease in the age-adjusted rate, from 59.8 to 34.5 per 100,000 persons, over this 10-year time period. All four age groups had significant decreases in hospital stay rates for MVT occupant injuries over this time period.
- Hospital stay rates for MVT occupant injuries decreased 62%* among persons ages 15-24 over this time period.
- MA residents ages 65+ had the smallest decline (26%*) in hospital stay rates for MVT occupant injuries compared to other age groups.
- Although hospital stay rates for MVT occupant injuries were highest among young people ages 15-24 during the first part of this time period, between 2011 to 2013 these rates were highest among older adults ages 65+.

Figure 5b. Hospital Stay Rates¹ for Traffic-related MV Occupant Injuries by Age Group, MA Residents, 2004-2013



*Change in rate over the entire time period was statistically significant at $p < .05$

1. Rates for age groups are age-specific and rates for the total population are age-adjusted per 100,000 persons.



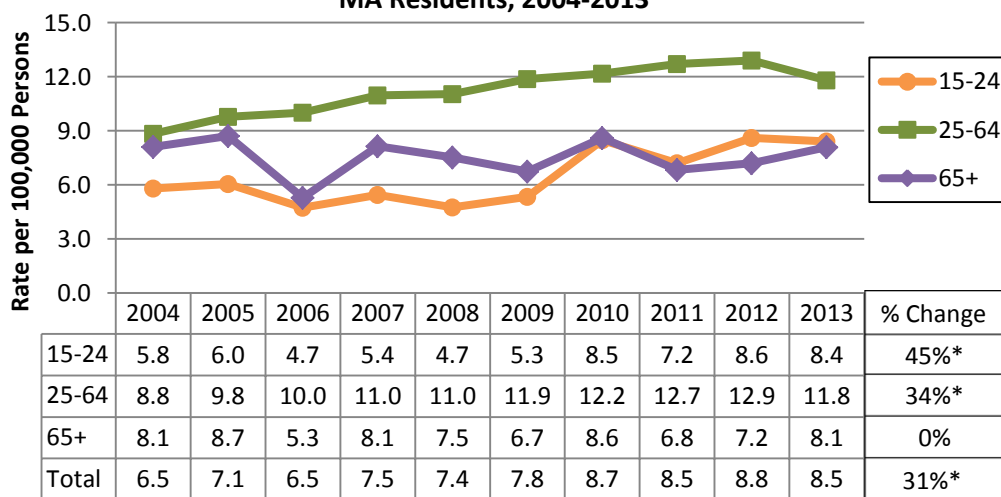
Injuries Among Massachusetts Residents, 2013

Trends – Suicides¹

- Between 2004 and 2013, the number of suicides among MA residents increased from 429 to 595. This corresponds to a 31%* increase in the overall suicide rate over this 10-year time period, from 6.5 to 8.5 per 100,000 persons. Suicide rates increased among young people ages 15-24 and adults ages 25-64. There was no net change, however, in the suicide rate among MA residents ages 65 and older.
- MA adults ages 25-64 had the highest suicide rates compared to other age groups. The suicide rate for this age group increased by 34%* over this time period.
- Between 2004 and 2009, MA residents ages 65+ had the second highest suicide rate, but after 2010 young people ages 15-24 had the second highest suicide rate.
- Suicide rates among MA children ages 0-14 are not shown, as there were too few deaths annually (often less than 5) to calculate accurate rates.



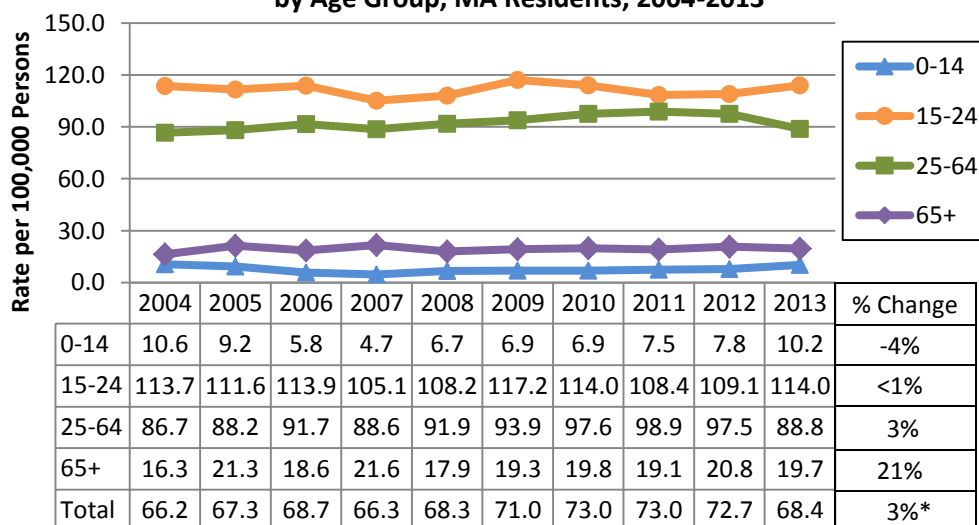
Figure 6a. Suicide Rates² by Age Group, MA Residents, 2004-2013



Hospital Stays for Self-inflicted Injuries

- Between 2004 and 2013, the total number of hospital stays for nonfatal self-inflicted injuries increased from 4,270 to 4,614. This corresponds to a 3%* increase in the age-adjusted rate of self-inflicted injuries over this time period (from 66.2 to 68.4 per 100,000 persons).
- Young people ages 15-24 had the highest hospital stay rates for self-inflicted injury over this time period, followed closely by adults ages 25-64.
- Older MA residents ages 65+ and children ages 0-14 had much lower hospital stay rates for self-inflicted injuries compared to the other two age groups.
- There were no significant changes in rates in the four age groups we looked at, which was partly due to variability in these rates over this 10-year time period.

Figure 6b. Hospital Stay Rates² for Self-inflicted Injuries by Age Group, MA Residents, 2004-2013



*Change in rate between 2004 and 2013 was statistically significant at $p < .05$

1. Suicide data were based on MA Vital Statistics and may differ from data in other reports from the MA Violent Death Reporting System.

2. Rates for age groups are age-specific and rates for the total population are age-adjusted per 100,000 persons.



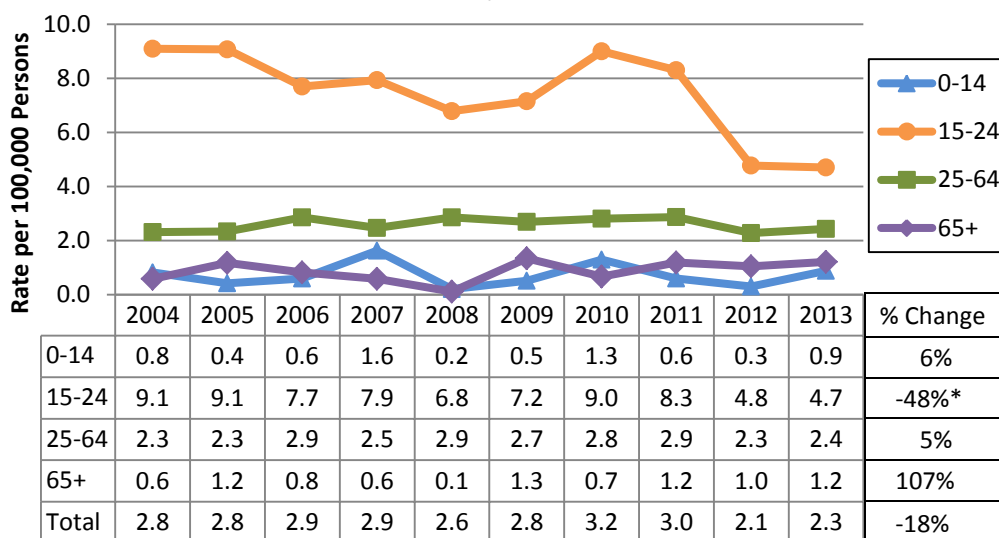
Injuries Among Massachusetts Residents, 2013

Trends – Homicide¹

- Between 2004 and 2013, the number of homicides among MA residents decreased from 175 to 155¹. This corresponds with an 18% decrease in the overall homicide rate (from 2.8 to 2.3 per 100,000 persons), but this change was not statistically significant.
- Homicide rates were highest among young people ages 15-24. This was the only age group, however, in which homicide rates decreased significantly (-48%*) during this time period.
- MA adults ages 25-64 had the next highest homicide rates. These rates remained fairly stable over this 10-year time period.
- Homicide rates were lowest among children under age 15 and adults over age 65. These rates did not change significantly over this 10-year time period, partly due to fluctuations in rates.



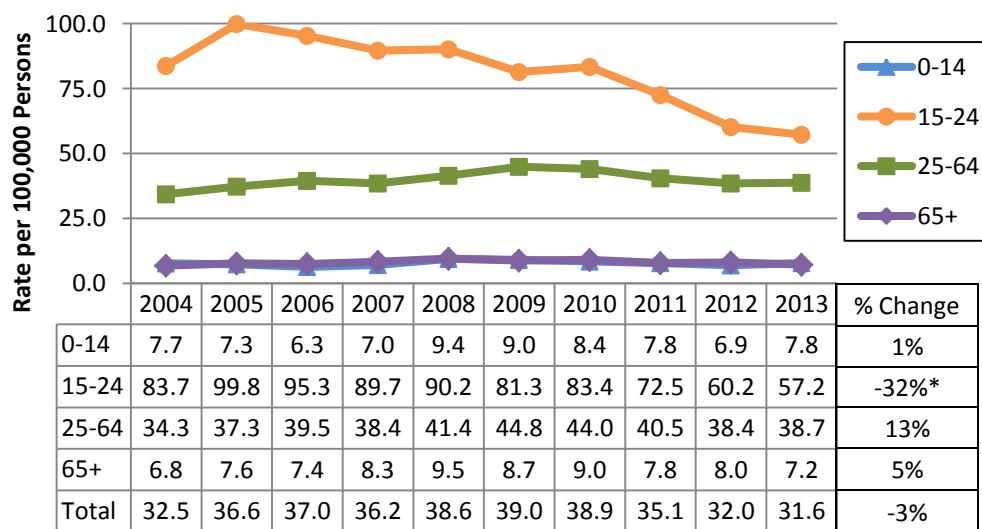
Figure 7a. Homicide Rates² by Age Group, MA Residents, 2004-2013



Hospital Stays for Assault-related Injuries

- The total number of hospital stays for nonfatal assault-related injuries increased from 2,075 in 2004 to a high of 2,531 in 2010, then decreased to 2,106 in 2013. Since the increase and subsequent decrease in these counts were of similar magnitude, there was little net change in the rate of such injuries over the entire 10-year period.
- Similar to homicide rates, young people ages 15-24 had the highest hospital stay rates for assault-related injuries, but were also the only age group in which rates decreased significantly (-32%*).
- MA adults ages 25-64 had the next highest hospital stay rates for assault-related injuries. These rates increased through 2009, then decreased. The net change in rates was not statistically significant.
- Hospital stay rates were lowest in children ages 0-14 and adults ages 65+ and remained fairly stable over this time period.

Figure 7b. Hospital Stay Rates² for Assault-related Injuries by Age Group, MA Residents, 2004-2013



*Change in rate between 2004 and 2013 was statistically significant at $p < .05$

1. Homicide data were based on MA Vital Statistics and may differ from data in other reports from the MA Violent Death Reporting System.

2. Rates for age groups are age-specific and rates for the total population are age-adjusted per 100,000 persons.



Injuries Among Massachusetts Residents, 2013

Injury Prevention in Massachusetts

While we have made tremendous progress in the field of injury prevention over the past several decades, this report highlights that there is still work to be done. Injuries are largely preventable events. The public health approach to preventing injury is similar to that for preventing disease. Injuries are not simply “acts of fate”. The Massachusetts Department of Public Health’s (MDPH) Division of Violence and Injury Prevention works closely with our internal partners, other state agencies and external institutions and organizations to advance practices and policies that both protect Massachusetts residents from injury and reduce injury severity. One approach to violence and injury prevention utilizes a framework sometimes referred to as “the four E’s” of injury prevention. These include:

- *Environmental Design and Engineering*: Adoption of safer products and environmental designs can greatly reduce one’s risk of injury.
- *Enactment and Enforcement of Policies*: Laws, regulations and institutional policies can promote safe behaviors or responses and prevent injury.
- *Education*: Educating the public and professionals can change behaviors and reduce injuries.
- *Emergency Medical Services*: Ensuring a high quality trauma management system so that individuals who are injured are transported to facilities with the most appropriate care in order to reduce deaths and improve outcomes after an injury.

The data described in this bulletin provides useful information for identifying the reasons people are injured and the populations where the greatest burden of injury lies in Massachusetts. Through a concerted effort, we can use this data to inform strategies to advance the latest best practices and policies for injury prevention in Massachusetts and to improve the quality and length of life for many citizens each year.

Massachusetts Injury Prevention Activities

Through its collaborations with internal and external partners, the MDPH Injury Prevention and Control Program promotes unintentional injury prevention policies and programs in a number of key areas, some of which are described below. The current MDPH Strategic Plan for the Prevention of Unintentional Injury can be found at <http://www.mass.gov/eohhs/docs/dph/injury-surveillance/strategic-plan-2012-2016.pdf>.

Falls among Older Adults

MDPH strategies to prevent falls among older adults include supporting prevention infrastructure and stakeholders through the MA Falls Prevention Coalition and MA Prevention and Wellness Trust Fund grantee partnerships; promoting community-based programs to improve strength and balance; promoting fall risk assessments by primary care providers; developing and disseminating educational materials; convening the MA Commission on Falls Prevention to draft policy and programming recommendations; and improving Massachusetts data on fall injuries. Find more information at www.mass.gov/dph/injury (falls and older adults).

Drug Overdoses

A growing number of drug overdoses in MA are caused by opioid-related drugs. In February 2015, Governor Baker established an Opioid Addiction Working Group to gather information from communities and develop a statewide strategy to combat opioid addiction. Strategies implemented in MA include funding community prevention coalitions, the Parent Power educational campaign, expanding the availability of Naloxone (to reverse opioid overdoses) and requiring prescribers to use the Prescription Monitoring Program. Additional information is available at www.mass.gov/opioid. DPH also helps fund the Regional Center for Poison Control and Prevention, which provides both treatment assistance and education and outreach to prevent poisoning and overdoses.



Injuries Among Massachusetts Residents, 2013

Massachusetts Injury Prevention Activities (cont.)

Motor Vehicle Crashes

Occupant protection is a priority area of the MDPH's Strategic Plan for Unintentional Injury Prevention. Specific strategies include supporting prevention infrastructure and stakeholders through the Traffic Safety Coalition of Massachusetts, a coalition of transportation safety advocates from across the state; disseminating relevant state data, research findings and evidence-based strategies to prevention partners; participating in the planning and implementation of the MA Strategic Highway Safety Plan (SHSP); and developing a model Safe Driving Policy for organizations to adopt. Find more information at www.mass.gov/dph/injury (transportation safety).

Child Drowning

The Massachusetts State Child Fatality Review Team considers drowning prevention a key focus area of preventable deaths. As a result of drowning fatality reviews by this team, MDPH promotes a range of specific prevention strategies to the public and key stakeholders, including continuous supervision of children while in or near water, child-proof barriers for all backyard pools, use of personal flotation devices by children in boats, and learning CPR and other steps to take in the event of a possible or near-drowning. Find more information at www.mass.gov/dph/injury (water safety).

Youth Sports Concussions

Following passage of sports concussions legislation in 2010, MDPH has worked with key stakeholders to ensure that these injuries are identified and managed appropriately among students at MA middle and high schools. MDPH has developed regulations requiring standardized procedures for students, coaches, school staff, parents and medical professionals on prevention, training, management and return to activity decisions, and continues to actively implement these policies within MA middle and high schools. Find more information at www.mass.gov/sportsconcussion.

Suicide Prevention

The Suicide Prevention Program offers a wide range of trainings for behavioral health professionals, caregivers and people who work with "at risk" populations. The program offers presentations to groups and community members to raise awareness of suicide as a public health issue. The program funds prevention activities for dozens of community-based providers, state agencies and regional coalitions. For more information about trainings and prevention programs see www.mass.gov/dph/suicideprevention.

Youth Violence Prevention

MDPH funds three youth violence prevention initiatives, which all use a positive youth development approach. **Safe Spaces for LGBTQ Youth** supports community-based programs that conduct violence and suicide prevention activities focusing on the needs of gay, lesbian, bisexual and transgender youth. **Primary Violence Prevention Programs** conduct primary prevention activities with youth who are at high risk of violence, but not necessarily engaged in violence yet. **Youth at Risk Programs** conduct secondary prevention activities with the highest risk youth, who may have engaged in violence. All three initiatives use a range of strategies to engage, support, educate and provide opportunities for "at risk" youth.



Injuries Among Massachusetts Residents, 2013

Resources

For further information about injury prevention efforts in Massachusetts, contact:

Injury Prevention and Control Program (IPCP)

Massachusetts Department of Public Health
250 Washington Street, 4th Floor
Boston, MA 02108
(617) 624-5413

www.mass.gov/dph/injury

This report and other MA injury data are available on-line at the Injury Surveillance Program website. Custom data analysis can also be requested by contacting the Injury Surveillance Program directly at:

Injury Surveillance Program (ISP)

Massachusetts Department of Public Health
250 Washington Street, 4th Floor
Boston, MA 02108
Phone: (617) 624-5648 ; e-mail: MDPH-ISP@state.ma.us
www.mass.gov/dph/isp

Fall Prevention Resources

National Center for Injury Prevention and Control

Centers for Disease Control and Prevention
www.cdc.gov/homeandrecreationalafety/falls

Center for Healthy Aging

National Council on Aging
www.ncoa.org/healthy-aging/falls-prevention



Suicide Prevention Resources

National Suicide Prevention Lifeline: 1-800-273-TALK (8255); Veterans, press 1

MA Samaritans Helpline: 1-877-870-HOPE (4673)

Suicide Prevention Program

Massachusetts Department of Public Health
www.mass.gov/dph/suicideprevention



Youth Violence Prevention

Division of Violence and Injury Prevention

Massachusetts Department of Public Health
www.mass.gov/dph/dvip

Youth Violence Prevention Strategies

Centers for Disease Control and Prevention
www.cdc.gov/violenceprevention/youthviolence/prevention.html



Injuries Among Massachusetts Residents, 2013

Data Sources and Notes

Due to differences in data sources and injury definitions, data in this report should not be compared with the MA Death Report 2013 or reports based on data from the MA Violent Death Reporting System.

Deaths: Registry of Vital Records and Statistics, MA Department of Public Health. Includes MA residents who died in or out-of-state; non-MA residents are excluded. Deaths are compiled and reported by calendar year.

Nonfatal Injuries and Hospital Charges: MA Inpatient Hospital Discharge, Outpatient Observation Stay and Emergency Department Discharge databases, MA Center for Health Information and Analysis. These data are compiled and reported by fiscal year. Data do not include non-MA residents or MA residents who received care out-of-state.

Population: Missouri Census Data Center, Population Estimates by Age. This site provides the most recent population estimates from the U.S. Census Bureau. http://mcdc.missouri.edu/websas/estimates_by_age.shtml

Counts and Rates: Due to confidentiality guidelines, counts and rates based on less than 11 nonfatal injuries are suppressed. Rates based on counts of less than 20 may be unstable and should be interpreted with caution; rates are not calculated on counts of less than 5 deaths. Rates are age-adjusted rates per 100,000 persons unless otherwise noted. Trend tables on pages 7-12 use age-specific rates per 100,000 persons.

Injury Definitions

Injury Deaths: Injury deaths are defined as those with an ICD-10 code of V01-Y36, Y85-Y87, Y89 or U01-U03 in the underlying cause of death field. Adverse medical/surgical effects and late entry deaths are excluded.¹

Injury-related Hospital Stays: Hospital stays include hospital discharges and observation stays; in-hospital deaths and transfers are excluded. Injury cases are defined as those with an ICD-9-CM code of 800-909.2, 909.4, 909.9, 910-994.9, 995.5-995.59 or 995.80-995.85 in *any* diagnosis field. Adverse medical/surgical effects are excluded.¹ In contrast with CDC guidelines, the MA injury definition searches all diagnosis fields for these codes, rather than just the principal diagnosis field.

Injury-related Emergency Department (ED) Visits: Injury cases in ED data are defined as those with an ICD-9-CM code of 800-909.2, 909.4, 909.9, 910-994.9, 995.5-995.59 or 995.80-995.85 in the *principal* diagnosis field, (which excludes adverse medical/surgical effects), OR E800-E869, E880-E929, or E950-E999 in *any* external-cause-of-injury (E-code) field.¹ Deaths are excluded.

Injury Cause and Intent: With the exception of drug overdoses, injury deaths are classified according to CDC guidelines using ICD-10 underlying cause of death codes² and nonfatal injuries are classified by cause and intent according to CDC guidelines using the first valid ICD-9-CM E-code.³

Drug Overdoses: Fatal drug overdoses are defined as those with an ICD-10 code of X40-X449, X60-X649, X85-X859 or Y10-Y149 in the underlying cause of death field. Nonfatal drug overdoses are those with an ICD-9-CM code of 9600-9799 in *any* diagnosis field OR E850.0-E858.9, E950.0-E950.5, E962.0 or E980.0-E980.5 in *any* E-code field.

1. Thomas KE, Johnson RL. *State injury indicator report: Instructions for preparing 2011 data*. Atlanta (GA): Centers for Disease Control and Prevention, National Center for Injury Prevention and Control; 2013.

2. See http://ftp.cdc.gov/pub/Health_Statistics/NCHS/injury/sascodes/icd10_external.xls

3. See http://www.cdc.gov/injury/wisqars/ecode_matrix.html

This publication was supported by grant #5U17/CE002009-02 from the Centers for Disease Control and Prevention. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the Centers for Disease Control and Prevention.